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In the *Journal of the College of Science*, in the Imperial University of Tokyo, Dr. S. Hatta of the College of Peers has an important memoir on the development of "Pronephros and Segmental Duct in the Lamprey." It is a worthy member of the series of admirable papers setting forth the original investigations of the students and associates of Professors Mitsukuri, Watase, and Iijima—one of the most hopeful phases of the development of New Japan.

D. S. J.

**Notes.**—The anatomy of the wings of the thrushes belonging to the genus *Micropus* has been very fully worked out by Buri (*Jena Zeitschr.*, Bd. XXXIII, pp. 361–610). The account includes a full description of the brachial plexus and of the muscles of the wing, and is based on a broad comparative study of the subject. Unfortunately the general results are meagre and pertain chiefly to minor questions in the taxonomy of this group of birds. As an illustrated record of the comparative anatomy of the parts investigated, Buri's contribution is a praiseworthy effort.

The number of ants in a hill has been variously estimated. Forel made an indirect calculation for a hill of medium size of *Formica pratensis* and arrived at the conclusion that it contained 114,000 ants. The largest hills he thought might contain as many as 500,000. In these conclusions he was supported by Lubbock. Yung (*Archives Zoöl. Expér. et Générale*, 3 Sér, Tome VII, pp. xxxiii–xxxv, 1900), however, has made actual counts of all the inhabitants in several isolated hills of *Formica rufa*. He has found the numbers to vary between 19,933 and 93,694 and not to be proportional to the size of the hill. He believes that the previous estimates have been exaggerated.

The New York State Entomological Field Station, which held its first session at Saranac Inn last summer, will remove to Ithaca for the coming season. Professor James G. Needham of Lake Forest University will continue in charge of the work. The report of the first session, which is expected to issue shortly, will contain among other things extensive contributions to the knowledge of the life histories of aquatic insects, especially dragon flies, may flies, and caddis flies, and a few very interesting forms of Neuroptera and Diptera.

Although the medullary substance of the brains of most vertebrates has been rather fully studied, this portion of the ungulate brain, for some unknown reason, has received very little attention.

To remedy this defect Schellenberg (*Jena. Zeitschr.*, Bd. XXXIV, p. 113) has made an extended study of the medullary parts of the brains of goats, sheep, oxen, horses, and swine. In all these the centrum ovale is relatively small. The excessive size of the fibrous masses in the frontal lobes of swine is attributed to the well-developed sense of smell in these animals. In a similar way the great masses of medullary substance in the occipital lobes of the goat are supposed to be associated with the well-known quickness of sight of this animal. The fornix was about equally developed in all the ungulates studied, but the corpus callosum was relatively most prominent in the goat. As this organ is suspected of being connected with the associative operations of the cortex, its great size in the goat may be an indication of the rather remarkable psychical qualities of this animal as contrasted with sheep, etc.

#### BOTANY.

**The Phytogeography of Nebraska**<sup>1</sup> appears in a new and revised edition, in the preface to which the authors state that the greater portion of the first edition was destroyed in a fire that consumed the publisher's buildings. We cannot but rejoice in the calamity, for we ever felt that the form in which the work was cast was an injustice to its exceeding high merit and true worth. We cannot, however, but regret that the opportunity was not taken advantage of to carry the revision still farther. In our opinion it would have been better to have entirely reëdified the structure on a new foundation. The very excellent material was deserving of this. Rapid as has been the evolution of the two volumes, — witness the timely insertion relative to frequency and abundance, so conspicuously absent from the first edition; the better treatment of the important factor of light, — these but examples of numerous improvements, — yet we cannot but feel that the present method of treating the habitat group is the pernicious root of much evil that afflicts our ecological classification. The habitat group should be relegated to an inferior position, or better abolished altogether, than as at present producing turgidity in what would by a more logical treatment be perfectly clear. Without

<sup>1</sup> Pound, Roscoe, and Clements, F. E. *The Phytogeography of Nebraska*. I. General Survey. Published by the Botanical Seminar of the University of Nebraska. Lincoln, 1900. Second edition. 422 pp., with four maps.